Review

Sustainable consumption communication: A review of an emerging field of research

Daniel Fischer [a, b, i, *], Julia-Lena Reinermann [c, d, i], Georgina Guillen Mandujano [e, i], C. Tyler DesRoches [b, f], Sonali Diddi [g, i], Philip J. Vergragt [h, i]

[a] Wageningen University & Research, Strategic Communication Chair Group, The Netherlands
[b] Arizona State University, School of Sustainability, USA
[c] Institute for Advanced Study in the Humanities, Essen, Germany
[d] FernUniversität Hagen, Germany
[e] Tampere University, Gamification Group, Faculty of Information Technology and Communication Sciences, Finland
[f] Arizona State University, School of Historical, Philosophical and Religious Studies, USA
[g] Colorado State University, Department of Design and Merchandising, USA
[h] Clark University, George Perkins Marsh Institute, Worcester, MA, USA
[i] Working Group "Communication" of the Future Earth Knowledge-Action Network "Systems of Sustainable Consumption and Production" (WGCoCo), USA

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ABSTRACT

Communication plays an important role in promoting sustainable consumption. Yet how the academic literature conceptualizes and relates communication and sustainable consumption remains poorly understood, despite growing research on communication in the context of sustainable consumption. This article presents the first comprehensive review of sustainable consumption communication (SCC) research as a young and evolving field of scholarly work. Through a systematic review and narrative synthesis of N = 67 peer-reviewed journal articles, we consolidated the research conducted in this field into four distinct types: communication as an approach to (1) behavior change, (2) self-empowerment, (3) systems change, and (4) reflection on current discourses and practices around sustainable consumption. Our findings reveal that most journal articles focus on incremental changes in individual consumer behavior ("weak" sustainable consumption) and employ communication as an intervention tool with little reference to communication science and theory. They also reveal integration challenges arising from the disciplinary diversity and fragmentation characteristic of the research field. Future research should develop shared frameworks and terminology, diversify its foci, synthesize relevant evidence, and innovate critical perspectives that go beyond one-way business-to-consumer communication. The results of our review can serve researchers engaged in sustainable consumption communication to better systematize their efforts and contribute more effectively to changing systems of consumption in the future.

Contents

* Corresponding author. Wageningen University & Research, Strategic Communication Group, The Netherlands.
  E-mail address: daniel.fischer@wur.nl (D. Fischer).

1. Introduction

No sustainability scientist or researcher denies that sustainable development depends on achieving sustainable consumption and production (Brown, 2012) and yet communication researchers and practitioners have struggled with the complex and systemic nature of sustainable consumption, which makes it an "ambiguous and unwieldy" (Krause, 2009, p. 286) concept that is difficult to communicate to the general public. Although several researchers and practitioners have suggested how sustainable consumption could be communicated (Reisch and Bietz, 2011; Guillen Mandujano et al., 2021; Vergragt et al., 2016), sustainable consumption communication (SCC), in contrast to, for instance, climate communication (Moser, 2010), has not yet developed into a consolidated field of research. Progress in the evidence-based use of communication research to conceptualize and promote sustainable consumption has been hampered by the fact that research on SCC is organized across several fields of practice (e.g., education, NGO campaigning, corporate communication) and conducted through different academic disciplines (e.g., marketing, consumer or communication research), which makes it difficult to take stock of the field and systematically develop it further.

This review aims to advance the consolidation of SCC as a research field. In response to the lack of comprehensive explorations of research in SCC mentioned above, the current study reviews and synthesizes peer-reviewed journal literature on sustainable consumption and communication. We conducted a systematic review and narrative synthesis to answer the following question:

How are the concepts of communication and sustainable consumption conceptualized and how are they related to each other in the peer-reviewed journal literature?

We first describe the status quo of sustainable consumption and sustainability communication research and outline our research design. Next, as the centerpiece of our paper, we present the different conceptualizations of communication and sustainable consumption we identified in the literature and synthesize them into four distinct approaches in SCC research. Finally, we discuss the main trends in conceptualizing and relating sustainable consumption and communication and reflect on the limitations, strengths, and weaknesses of our approach. We close by examining promising new avenues in the field of SCC research.

2. Communication and sustainable consumption

The socio-economic disparities and environmental crises that humanity is currently facing are deeply rooted in the unsustainable consumption patterns of societies across the world, in particular in the more affluent segments of the population (Wiedmann et al., 2020; Pike and DesRoches 2020). From a consumer perspective, consumption takes place in different areas (e.g., food, clothing, mobility) and different phases (e.g., acquisition, usage, disposal) (Geiger et al., 2018). Goal 12 of the United Nations Sustainable Development Agenda 2030 (SDG 12) calls for responsible consumption and production, aiming at "doing more and better with less" to improve the quality of life and leave "no one behind" (United Nations, 2015). Although technological innovations have led to a more efficient use of resources, they have neither reduced overall resource use — due to rebound effects (Binswanger, 2001; Hertwich, 2005) — nor improved the quality of life on a broader scale (Bengtsson et al., 2018). Therefore, researchers have suggested that technological innovations should be complemented by social innovations to curb unsustainable consumption impacts and achieve overall reductions, for example, by nurturing a culture of sufficiency (Princen, 2005; Speck and Hasselkuss, 2017), sharing (Botsman and Rogers, 2011), or voluntary simplicity (Elgin, 1982). Status, power, identity, and success are strongly associated with consumer goods (Baudrillard, 1998; Bourdieu, 1984), an association that is systematically reinforced by increasingly sophisticated advertising (Delre et al., 2016; Tuchman et al., 2018). This can bring

attempts to change consumption patterns into open conflict with the interests of powerful players in industries benefitting from current levels of mass consumption. Not surprisingly, the question of power in sustainable consumption research is currently gaining traction (Fuchs et al., 2016, 2019).

While SDG 12 represents a political consensus on desirable goals in sustainable consumption, the question of exactly what should change and how is highly controversial. In addition to the question of how far beyond efficiency gains sustainable consumption must go and how it can also ensure good living conditions for all (on weak vs. strong sustainable consumption, see Lorek, 2009), discussions have flared up about who should be the primary agents of change to achieve more sustainable consumption. The traditional focus of consumer policy has long been on providing information about environmental effects, for example, through labeling (Horne, 2009; Pollex, 2017) and on encouraging, educating, and empowering private consumers to change their consumption choices (McGregor, 2005; Mont & Dalhammar, 2005). More recently, behavioral science-based interventions that exploit biases in consumer decision-making processes (nudges) to advance more sustainable choices have become popular (Heidbrink, 2015; Lehner et al., 2016). What these approaches have in common is that they conceptualize consumer behavior as individual choice. This focus has drawn criticism for neglecting the complexity of consumption as well as for privatizing and depoliticizing sustainability efforts (Grunwald, 2011). Proponents of social practice theory (Shove, 2003; Sahakian and Wilhite, 2014) argue that consumption is not a sole individual's action, but one that is socially, spatially, and culturally shaped and can only be understood and changed in its collective attributions of meaning and its embedding in "systems of provision" (Spaargaren, 2003) or "systems of consumption and production" (Bengtsson et al., 2018).

Communication is widely recognized as playing an important role in changing these unsustainable consumption dynamics. An important task of communication is the problematization of consumption and the stimulation of a societal debate to change consumption patterns (Bengtsson et al., 2018; Wiedmann et al., 2020). This emphasizes the constitutive role of communication, which pioneers of ecological communication such as Niklas Luhmann have already pointed out when they noted that without the problematization of an environmental problem through communication, "it has no social effect" (Luhmann, 1989, p. 29).

Within communication science itself, conceptualizations of communication have become more differentiated since the field began to institutionalize in the 1920s, producing more than 150 theories to explain communication effects (Lock et al., 2020). Three examples will serve here to illustrate the breadth of theoretical perspectives in the field. Earlier models of communication were strongly influenced by mathematical models of communication technology and propaganda research. Human communication was regarded as a process of sign transmission in which a transmitter sends a coded signal to transmit information via a channel to a receiver (see e.g., Shannon and Weaver, 1949). However, neither the sign itself nor the interpretation and effect associated with it played a role. Later models considered how information exchanged in and through communication was processed at the individual level. The elaboration likelihood model, for example, assumes that the content of a communication message, depending on the motivation and ability of the recipient, is either given thoughtful consideration (central route, high elaboration) or casually processed without major deliberation (peripheral route, low elaboration) (Petty and Cacioppo, 1986). A third model of communication theory sees communication as a process underpinned by social relations. It was based on the sociology of knowledge (see e.g., Berger and Luckmann, 1966) and subsequently developed by discourse

analysis (Keller et al., 2013). Communication serves not only to transmit information, but also to coordinate human actions to create social meaning, significance, and shared reality.

These three approaches in communication research are applied in the broader field of sustainability communication. Here, communication is charged with a distinct purpose: to advance transformation processes towards more sustainable development (Adomßent and Godemann, 2011). Such communication *for* sustainability can take different forms that reflect different approaches in communication research: from one-way approaches focused on persuading the recipient to accept objectives determined by the sender (communication *of* sustainability) to interactive approaches geared towards shared meaning-making, deliberation, and social learning (communication *about* sustainability) (Newig et al., 2013).

While communication has begun to play a more prominent and nuanced role in sustainability research, as evidenced by the emergence of the field of sustainability communication (Godemann and Michelsen, 2011; Weder et al., 2021), it remains limited to practical applications such as campaigning to make sustainable consumption a key leverage point for achieving the goals in Agenda 2030 and the Paris Agreement. However, a comprehensive and detailed analysis of how communication is studied in sustainable consumption research is not yet available. This systematic review with a narrative synthesis addresses this gap. It conceptualizes sustainable consumption communication (SCC) as a distinct field at the intersection of communication research and sustainable consumption research. Our review aims to consolidate the growing body of SCC research by examining how the intersection of communication and sustainable consumption is framed and studied in the field.

3. Research design and methods: systematic review and narrative synthesis

In light of the accelerating growth and increasing specialization of academic knowledge production, literature reviews have become increasingly necessary. New approaches, accompanied by quality assurance standards, have been developed to make reviews fruitful for different purposes and needs. Systematic literature reviews have long been used to critically appraise the available evidence on a particular topic by synthesizing qualitative and quantitative research findings (Moher et al., 2009). More recently, literature reviews have been used to develop new frameworks or conceptualizations in emerging and fragmented research fields (Torraco, 2005).

SCC marks a new multidisciplinary field that has not yet been studied comprehensively. Our research interest here is to explore and identify heterogeneous conceptualizations in the field and to provide an overview of how these conceptualizations are related to each other in the peer-reviewed journal literature. Thus, the main purpose of this review is to provide an inventory of the field that is both systematic and critical in its appraisal of diverse research approaches and their disciplinary, historical, and geographic contexts (Snyder, 2019). To achieve this twofold objective, we combine two approaches: a systematic literature review (Moher et al., 2009) as an established procedure in data collection and selection, and narrative synthesis (Wong et al., 2013) as an approach to the structured analysis and interpretation of qualitative data. We have chosen a systematic method over less structured forms of literature reviews because, given the fragmented nature of the field and our own diverse disciplinary practices and prior knowledge as a team of authors, we would otherwise have run the risk of producing an incomplete and highly subjective stocktaking of limited value to others (Robinson and Lowe, 2015). Moreover, it was not our aim to present an annotated critique of the field, as is usual for more open review formats. The systematic approach ensures the transparency

and reproducibility of data collection and analysis, and thus a more independent and robust review of a young research field (Fink, 2009). Unlike typical systematic literature reviews, our review did not aim to synthesize evidence (in the sense of "how to communicate effectively"), as our goal was to analyze how key concepts are conceptualized and related to each other. This required an interpretive approach rather than a meta-analytic one. The choice of the analytical approach was strongly tailored to the research question of classifying and typifying different ways of how communication and sustainable consumption are related to each other. To serve this analytical goal, we used a typifying content-analytical procedure by Kuckartz (2014) to produce methodologically transparent results.

3.1. Data collection

Data retrieval in the study followed the established PRISMA protocol for reporting systematic literature reviews by Moher et al. (2009). We collected N = 105 journal articles and conference articles from the scientific database SCOPUS using a search string combining 'communication' and 'sustainable consumption' with Boolean operators (see Appendix A). The titles, abstracts, and keywords of the records were screened for compliance with two inclusion criteria: formal eligibility, defined as peer-reviewed journal article in English, and substantive eligibility, as determined by a topical focus on communication in a sustainable consumption context (see Appendix B). The coding was done by the interdisciplinary team of authors (with backgrounds in chemistry, learning sciences, communication studies, marketing, management, and philosophy). Three reviewers independently coded each publication. To reduce group effects and rule out reviewer-induced biases, we reassembled review teams for each article, ensuring that each reviewer coded the same number of articles and at the same frequency with every other reviewer. All disagreements in the coding process were discussed in the plenary group of six reviewers to make final decisions (consensual coding, Hill et al., 2005; Hill et al., 1997). A total number of $n = 30$ records were excluded in this first screening step. All remaining $n = 75$ journal articles then underwent in-depth full-text screening (eligibility check). In this step, another $n = 8$ articles were excluded for not meeting the inclusion criteria, leaving a final sample of $n = 67$ records entering the final analysis (see Fig. 1).

For the journal articles of the final sample, we added supplementary bibliometric data from SCOPUS, including journal, number of citations, author information (including affiliation) as well as year of publication. Additional data was generated through a collective review and coding of the journal articles. In this step, pairs of coders with the greatest number of disagreements in the previous screening step rated articles on key variables derived from the research question and extracted open-ended data and paraphrases (see coding guide in Appendix C).

3.2. Data analysis

Data analysis followed a three-step approach. In the first step, we analyzed the quantitative data (3.1) using descriptive statistical analysis. In the second step, the open-ended data were coded using thematic qualitative text analysis to analyze conceptualizations of sustainable consumption and communication (Kuckartz, 2014). In this step we reviewed the empirical data material to identify the conceptual distinctions it contains (see section 2). The following conceptual distinctions emerged (for details, see section 4.2):

- *Consumption domains* refer to the consumption areas (e.g., food, clothing, mobility) and its different phases (e.g., acquisition,

usage, disposal) (from the SCB-cube model by Geiger et al., 2018).
- *Sustainability impacts* refer to the sustainability dimensions (e.g., socio-economical, environmental) used in different journal articles to assess and qualify effects of consumption (Geiger et al., 2018).
- *Units of change* refer to the subjects of change and whether they are individual or collective entities. The analysis of units of change refers to debates in sustainable consumption research on the extent to which individual actors (e.g., household consumption decisions) or collective structures (e.g., legislation) should be the main levers for achieving sustainable consumption and be held responsible accordingly.
- *Routes of change* refer to the question of how communication is processed by parties involved, using heuristics/automatic/peripheral processing or reflexive/rational/central processing (see Evans, 2003) and how the processing influences the decision-making agents.
- *Modes of communication* refer to three distinct perspectives in which communication researchers engage with sustainable consumption (communication *of* sustainable consumption, communication *about* sustainable consumption, and communication *as* constructing sustainable consumption).

Finally, in a third step, we developed a typology of SCC. Following the principle of maximum contrast, we chose three conceptual distinctions as constituting variables (communication modes, routes of change, units of change), which in an initial 3 × 2 x 2 matrix construct the theoretical "attribute space" (Kuckartz, 2014) of the typology, resulting with 12 possible combinations (see Fig. 2). The other conceptual distinctions identified (consumption domains, sustainability impacts, and modes of communication) together with additional data collected served as descriptive variables to further profile and characterize the emerging types. Next, following Kuckartz's (2014) approach to qualitative empirical type-building, we reduced complexity of 12 possible combinations to identify those groups of journal articles that share many, but not all attributes (polythetic types) and represent those combinations that actually occurring our data. We combined communication modes 1 and 2 due to their similar interventionist orientation toward change, and distinguished them from mode 3, the perspective on communication as meaning construction. Finally, we discarded the attribute combination of the collective change unit and the heuristics/automatic/peripheral processing route because no item in our final sample could be assigned to this type. The process of conceptually constructing and empirically grounding the typology yielded four types and is illustrated in Fig. 2.

4. Results

In this section, we first present a descriptive overview of our final sample (4.1). Next, we analyze how sustainable consumption (4.2.1) and communication (4.2.2) are conceptualized in the data. Finally, we present a typology of sustainable consumption communication deriving from our empirical analysis (4.3). To clearly distinguish between the journal articles in our final sample (our primary data) and other literature used in this article, we refer to journal articles in the final sample with their ID number in squared brackets. Appendix E shows the bibliographical references belonging to these ID numbers.

4.1. Description of the final sample

Descriptive analysis of the final sample ($N = 67$) shows that research on sustainable consumption and communication is a
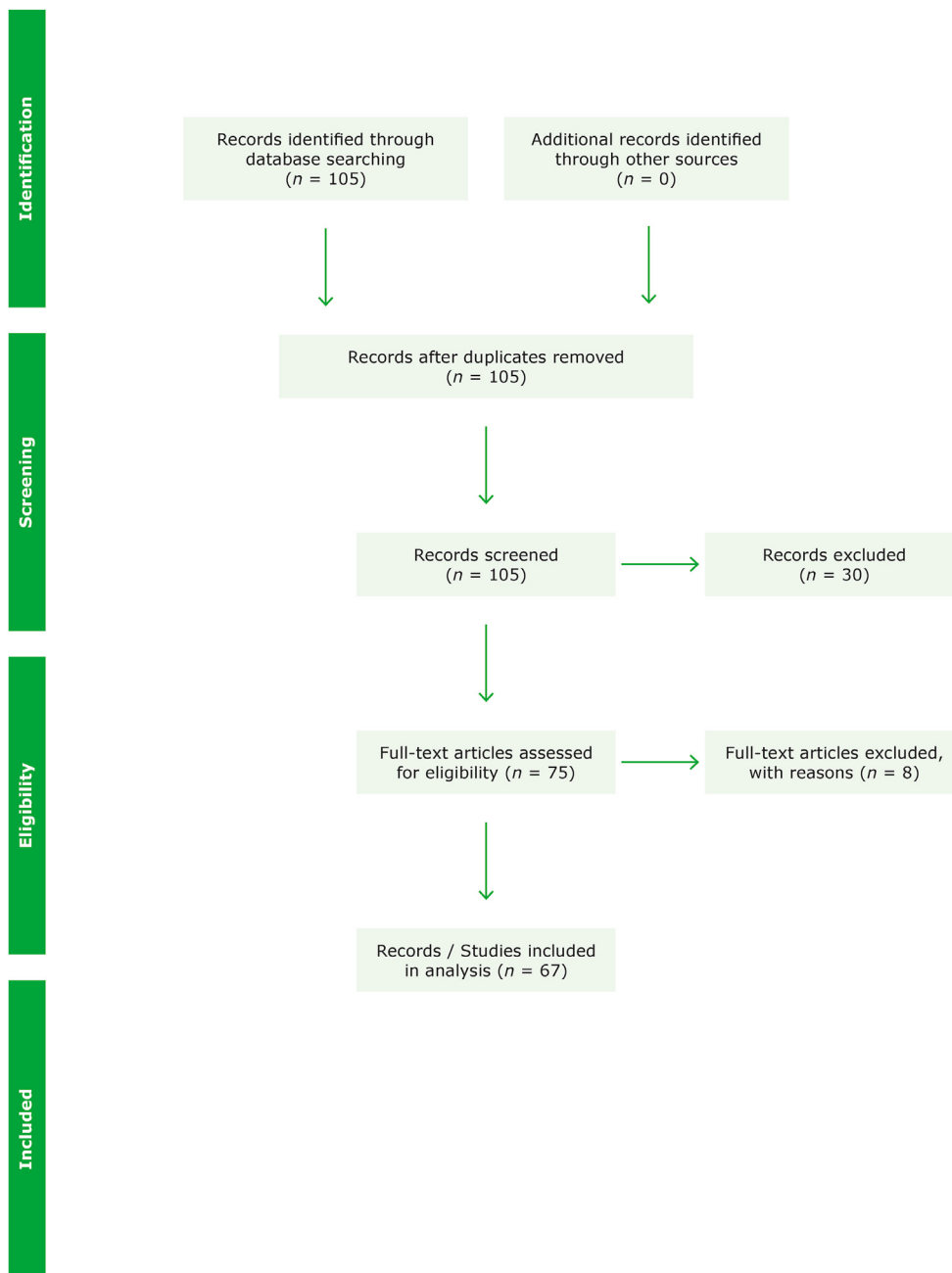
Fig. 1. Data collection and screening steps of the review (PRISMA Flow Diagram, Moher et al., 2009).

relatively young field of scholarly inquiry that is highly fragmented and heavily focused on European countries. None of the publications date from before the turn of the millennium. Most of the journal articles have appeared in the past five years (*Mdn* = 2015). Data also show the fragmentation of current research. The articles in the final sample were published in 38 different journals, with only seven journals contributing more than one article. The three journals which account for more than five articles are *Journal of Cleaner Production* ($n = 11$), *Sustainability* ($n = 7$), and the *Journal of Consumer Policy* ($n = 6$). An additional indication of the young and fragmented nature of the field is that the majority of the journal articles are cited less than five times ($n = 35$). At the same time, however, some journal articles are well cited. A quarter of the articles ($n = 16$) have more than 23 citations, including the most cited article of the sample ([14]) with 128 citations. Geographically, we analyzed research from $N = 75$ countries. Among these countries, more than two thirds are located in Europe ($n = 51$), with Germany ($n = 8$), the UK ($n = 6$), Sweden ($n = 5$), Denmark ($n = 4$), and Belgium ($n = 4$) taking leading positions. While Asia ($n = 14$) and Oceania/Australia ($n = 5$) together account for about one fourth of the journal articles, there is an apparent lack of research on North America ($n = 3$), South America ($n = 2$), and Africa ($n = 0$), which together represent almost 30 percent of the world population.

4.2. Conceptualizations of sustainable consumption and communication in the SCC literature

4.2.1. Conceptualizations of sustainable consumption

In this section we elaborate conceptualizations of consumption domains, sustainability impacts, and units and routes of change
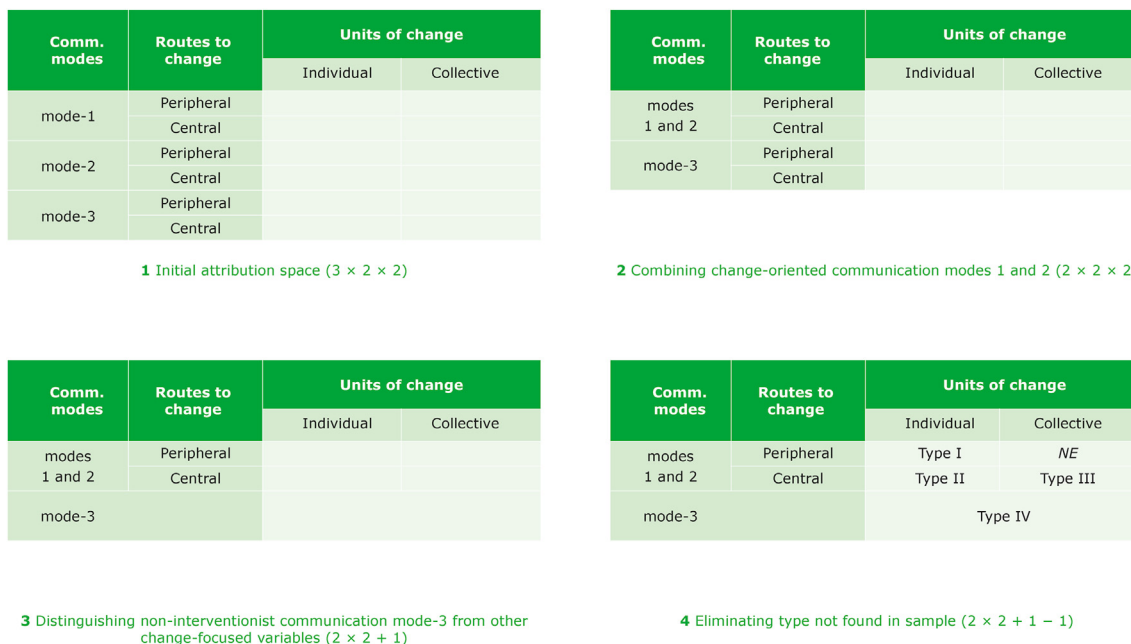
Comm. modes	Routes to change	Units of change	
		Individual	Collective
mode-1	Peripheral		
	Central		
mode-2	Peripheral		
	Central		
mode-3	Peripheral		
	Central		

1 Initial attribution space (3 × 2 × 2)

Comm. modes	Routes to change	Units of change	
		Individual	Collective
modes 1 and 2	Peripheral		
	Central		
mode-3	Peripheral		
	Central		

2 Combining change-oriented communication modes 1 and 2 (2 × 2 × 2)

Comm. modes	Routes to change	Units of change	
		Individual	Collective
modes 1 and 2	Peripheral		
	Central		
mode-3			

3 Distinguishing non-interventionist communication mode-3 from other change-focused variables (2 × 2 + 1)

Comm. modes	Routes to change	Units of change	
		Individual	Collective
modes 1 and 2	Peripheral	Type I	*NE*
	Central	Type II	Type III
mode-3		Type IV	

4 Eliminating type not found in sample (2 × 2 + 1 − 1)

Fig. 2. Development of the typology.

towards sustainable consumption.

4.2.1.1. Consumption domains. More than one third of all journal articles ($n = 25$) address the consumption area of food. Other areas, such as housing ($n = 8$), clothing ($n = 7$), mobility ($n = 3$), or information and communication technology ($n = 2$) are addressed by significantly fewer articles. Interestingly, almost one quarter of all journal articles ($n = 16$) do not explicitly refer to any consumption area, and one in five articles ($n = 13$) only refers to consumer goods in general terms.

Our review reveals that the phase that receives the most attention in the field is acquisition, most commonly the act of purchasing. More than two thirds of all journal articles ($n = 46$) address this phase, followed by usage with slightly less than one third ($n = 20$). Surprisingly, several journal articles engage substantively with the pre-consumption phase of production ($n = 18$), and only a few articles ($n = 8$) explore disposal as a consumption phase, which can also include re-use, recycle, and other forms of non-linear disposal. The same number of journal articles ($n = 8$) are unclear or unspecific about the consumption phase.

As a single article can address multiple consumption areas and phases, we conducted an additional analysis to better appraise the breadth of the perspectives on consumption. Findings show that more than two out of five journal articles ($n = 29$) address only a single area and a single phase of consumption. Only three articles study multiple areas and phases ([69], [72], [97]). About one fifth of all articles cover a single area and multiple phases ($n = 11$) or a single phase and multiple areas ($n = 3$). The rest of the journal articles are unclear or unspecific either in terms of area or phase ($n = 27$).

4.2.1.2. Sustainability impacts. Sustainability impacts of consumption are most commonly examined in two different ways: from an environmental perspective as environmental impacts, or from an integrated perspective as environmental and socio-economic impacts. Environmental impacts comprise (usually detrimental) consequences of consumption on different conditions as captured in the framework of planetary boundaries (Rockström et al., 2009).

The integrated perspective includes not only the environmental effects but also the socio-economic effects of consumption. In the broadest sense, these relate to the conditions and opportunities of people living now and in the future to lead a good life. Such conditions typically include indicators such as food safety or income (for a broader discussion, see Geiger et al., 2018). The majority of journal articles ($n = 37$) used an integrated perspective in their framing of sustainable consumption. Notably, however, a substantial share of journal articles ($n = 28$) framed sustainable consumption from an exclusively environmental perspective.

4.2.1.3. Units and routes of change towards sustainable consumption. Our analysis of units and routes of change for sustainable consumption (see section 3) reveals a general tendency in the field (about two thirds of all journal articles, $n = 44$) to conceptualize change towards sustainable consumption as individual behavior change (route of change) influenced externally by communication prompts that do not expect them to engage cognitively with the subject matter in any depth. Three out of four journal articles ($n = 51$) target the individual consumer. By changing individual private or household consumption behaviors, so the premise, greater sustainability in consumption systems can be achieved.

4.2.2. Conceptualizations of communication

The analysis shows that the concept of sustainable consumption is linked to diverse meanings of communication. We differentiate between three modes in which communication is conceptualized: communication *of* sustainable consumption, communication *about* sustainable consumption and communication *as* constructing sustainable consumption.

4.2.2.1. Mode 1: communication of sustainable consumption. In most of the journal articles ($n = 39$) in our sample, communication is understood as information that has to be transmitted to change existing individual predispositions (e.g., attitudes, problem awareness) to generate more sustainable consumption choices. The strong consumer focus of mode-1 communication is expressed by the fact that almost nine out of ten journal articles ($n = 35$) study

consumers as recipients of communication. Mode-1 communication provides:

> household consumers with more streamlined information in order to enable them to better shape the production and consumption system through their purchase decisions. ([17], p. 81).

The dominant communication dyad in mode-1 is business-to-consumer communication, with about two thirds of journal articles ($n = 26$). This approach is particularly prevalent in marketing as a way to support consumers "to find, choose and use sustainable products and services, by providing information, ensuring availability and affordability, and setting the appropriate tone" (World Business Council for Sustainable Development WBCSD, 2008, p. 22). The only other dyad that occurs in more than two journal articles is government-to-consumer communication ($n = 5$). Common tools in this communication mode are labeling, advertising, information brochures, and social media applications.

4.2.2.2. Mode 2: communication about sustainable consumption. Mode-2 communication accounts for about one quarter of the sample ($n = 14$). It is predicated on the construction of reciprocal meaning in communication and aims to better understand the conditions, causes, and strategies of existing consumption patterns every day (see e.g., Schatzki et al., 2001 on practice theory). Underpinned by deliberative theories and traditions of inquiry (e.g., Gastil and Black, 2018), communication research in this mode focuses on how individuals develop concepts of sustainable consumption and relate them to their everyday lives. It sets itself apart from the linear and mechanistic approach of mode-1 communication in its criticism of conceptualizing communication as transmitting messages to consumers to bring about a change in their purchase decisions. This critique has given rise to new paradigms such as sustainable marketing:

> Sustainable marketing — the new green marketing paradigm — thus moves beyond the information-as-a-thing communication model and shares traits with communicative information that acknowledge communication as negotiating meaning and exploring difference. ([73], p. 34).

Communication is seen as a social action (influenced by culture, structural conditions and practices) characterized by reciprocal interaction between the parties involved in the communication process. While research in this mode is still dominated by business-to-consumer communication ($n = 11$), it reflects public deliberation formats (government-consumer communication, $n = 5$) to a much greater extent than mode-1 communication. Mode-2 communication is more conducive to change agendas as it allows for education and empowerment in dialogue-oriented, participatory and co-creational formats.

4.2.2.3. Mode 3: communication as constructing sustainable consumption. Unlike mode-1 and mode-2 communication, mode-3 communication ($n = 14$) does not initially lend itself to a transformative agenda of sustainable consumption-related objectives. Its hermeneutical methodology studies discourse and interaction to uncover different meanings of sustainability and determine how they have established themselves in communication in a social area as a criterion for evaluating and shaping consumer behavior. Mode-3 research on communication and sustainable consumption is concerned with exploring what happens in the communication *of* and *about* sustainable consumption by applying critical perspectives (e.g., power structures, gender, diversity) to explain how these shape consumption practices:

> Given that the use and distribution of goods and services has gender implications, the purpose of this study is to examine how the gender perspective is integrated into SC discourses and praxis as pro-environmental behaviors in a specific geographic setting: Madrid, Spain. ([62], p. 254).

While mode-1 and mode-2 are interventionistic, sustainable consumption in mode-3 is conceptualized as an abstract "second-order construct" (Schütz, 1971) that needs to be studied in its contextual life usage. Consequently, journal articles categorized as mode-3 feature the broadest range of communication areas and units of change, from private consumers ($n = 14$), to civil society ($n = 8$), businesses ($n = 7$), government ($n = 6$), and from academia ($n = 4$) to media ($n = 2$). With its focus on tracing how meaning is assigned to sustainable consumption in different societal arenas and discourses, it can be best described as interpretative or (re)constructive research (Sattlegger and Rau, 2016).

4.3. Synthesis: a typology of SCC

In our empirically grounded conceptual typology there are four distinct types of SCC. These are described in this section and in Table 1.

4.3.1. Type I: communication for consumer behavior change (BC)
Type I has the largest share of journal articles ($n = 39$) and is focused on influencing change in consumer choices through behavior modification techniques that do not require consumers to engage more deeply with the issues of sustainable consumption. Instead, communication is designed to resonate with individual dispositions and/or appeal to cognitive biases.

Behavior change communication is the youngest strand of SCC research. The earliest publications date back to 2015 ($Md = 2016$, $IQR = 2014-2018$) and have been published in a wide range of journals ($n = 24$), with the *Journal of Cleaner Production* ($n = 7$), *Sustainability* ($n = 4$), *Journal of Consumer Policy* ($n = 3$), and *Business Strategy and the Environment* ($n = 3$) being the only journals with more than two articles. They are also the least frequently cited of all four types ($M = 10.1$, $SD = 16.8$, min $= 0$, max $= 90$), which may also be due to its being a relatively new research field. Geographically, most journal articles originated in European ($n = 15$) and Asian ($n = 10$) countries. Oceania/Australia ($n = 3$), as well as North ($n = 2$) and South America ($n = 2$), featured only marginally. Interestingly, the research carried out in the European context often compares different geographical areas ($n = 21$ country cases), whereas research in other regions tends to be focused on single countries.

Sustainable consumption is conceptualized predominantly in one consumption area ($n = 28$) and phase ($n = 27$), of which the areas of food ($n = 14$) and consumer goods ($n = 8$) and the phase of acquisition ($n = 20$) are the most frequent. Sustainability impacts are explored both in the environmental dimension ($n = 19$) and in an integrated way ($n = 20$). Strikingly, the justification for choosing one sustainable consumption change target over another is rarely made explicit. Communication is typically conceived of in a transmission mode-1 understanding ($n = 29$), which is strongly driven by businesses ($n = 28$) and governments ($n = 9$) as senders and almost exclusively by private consumers as receivers ($n = 7$). Interestingly, while sustainable consumption plays a central role in almost all journal articles ($n = 35$), communication is given only marginal consideration in more than one third of all articles ($n = 14$).

Journal articles of this type are predominantly empirical ($n = 33$)

Table 1
Typology of sustainable consumption communication research.

	Type I: Communication for consumer behavior change (BC)	Type II: Communication for consumer self-empowerment (SE)	Type III: Communication for consumption systems change (SC)	Type IV: Communication as constructing sustainable consumption (CC)
Journal articles	$n = 39$	$n = 9$	$n = 7$	$n = 12$
Unit of analysis	Individual consumers	Individual consumers	Collectives, networks	Communication artifacts
Focus	Low engagement with sustainable consumption in consumers' decision-making	High engagement with sustainable consumption in consumers' decision-making	Coordination processes between marketplace actors	Cultural and societal engagement with sustainable consumption
Examples	Nudging, social marketing	Boosting, consumer information and education	Voluntary labeling schemes, CSR, regulation, sanctions	Media/discourse analysis, responsibilization theory
Goals	Change through behavior modification	Change through capacity building	Change through coordination	Understanding and discursivity

and frequently examine the effect of specific communication interventions on individual behavior or behavioral intentions and/or behavioral constructs such as trust ([100]) or attitudes ([76]). Many of the communication approaches fall into the categories of social marketing and nudging. Among the communication interventions studied are message framing ([76]), games ([1]), labels and product information ([10], [50]), guest information in tourism ([86]), or communication skills of sales personnel ([98]). In addition, communication-related variables (e.g., exposure to green advertising, family communication patterns) are also examined as a condition ([9], [88]) or as part ([22]) of sustainable consumer behavior. Some journal articles focus more on general consumer behavior research and derive implications for future communication strategies (e.g., [35], [66], [87]). Tasks for future research are seen in strengthening the evidence base of the field through higher comparability of studies (e.g., through more shared survey instruments, theoretical or conceptual approaches, and terminology) and stronger longitudinal impact research that goes beyond short-term measurement of behavioral change. Moreover, journal articles in this type call for a more differentiated consideration of communication contexts in future research (e.g., the role of the household in consumption-related decision-making processes).

4.3.2. Type II: communication for consumer self-empowerment (SE)

Like behavior change communication (Type 1), research in the self-empowerment type ($n = 9$) is focused on individual consumers and their contributions to changing consumption and production systems. What sets this type apart is the route to change it pursues and the different goals that follow from it. Instead of attempting to modify consumer behavior through incidental communication, this type focuses on bringing individuals into active engagement with issues of sustainable consumption. The goal is to empower self-initiated action that goes beyond the sphere of private consumption to include civic action.

Self-empowerment communication is the second oldest strand of SCC research, with first publications as early as 2001 ($Md = 2012$, $IQR = 2010-2018$) and moderate citation rates ($M = 15.6$, $SD = 16.1$, min $= 1$, max $= 48$). The *Journal of Cleaner Production* ($n = 2$) and *Sustainability* ($n = 2$) are the only journals that have published more than one article of this type. A characteristic of this type of emancipatory consumer communication is its originating in only European ($n = 5$) and Asian ($n = 2$) countries.

The conceptualizations of sustainable consumption conveyed in the journal articles reflect those of behavior change communication (type II) in their focus on the areas of food ($n = 2$) and consumer goods ($n = 2$) (with n $= 4$ unclear areas). By contrast, journal

articles based on self-empowerment communication focus more strongly on usage ($n = 3$) and consider multiple phases ($n = 2$) in parallel, while addressing both environmental ($n = 4$) and integrated ($n = 5$) perspectives on sustainability impacts. This also manifests itself in a more explicit reflexive engagement with normative aspects of sustainable consumption. Self-empowerment communication uses different communication approaches, of which mode-1 ($n = 5$) features slightly more prominently than the more deliberative mode-2 ($n = 3$) communication. While business-to-consumer communication is most prevalent ($n = 5$) and nine out of ten journal articles address private consumers as receivers of communication, this type features multiple sender-receiver dyad. Communication is the focus of research reported in two-thirds of all journal articles.

Communication approaches studied (largely empirical, $n = 6$) in this type use different forms of "boosting" to steer decision-making (Hertwig and Grüne-Yanoff, 2017) and draw on different traditions of consumer education, from traditional consumer information to socially critical consumer empowerment education (McGregor, 2005). A strong concern of this type is the provision of relevant and reliable information that consumers need to make informed choices ([6], [43]). An example involves using sustainability communication to enable consumers to understand which actions can achieve a major sustainability impact ("big points"), thereby avoiding well-intentioned but comparatively ineffective token actions ("peanuts") ([3]).

Another concern in this type is to segment consumers based on their actual needs so that appropriate communicative strategies can be applied to empower more sustainable choices ([49], [101], [102]). An example is the use of feedback and metering to encourage consumers to actively experiment with new routines in their household ([28]).

Further research is needed to better consolidate and align the different types of empowerment being researched and to provide evidence-based strategies for designing effective interventions. Messages and offerings should be tailored to the concrete needs of target groups, rigorously pre-tested, and focused on the major high-impact priorities in sustainable consumption. Future research should be extended beyond individual case studies and take advantage of the findings in other fields such as health communication.

4.3.3. Type III: communication for consumption systems change (SC)

The third type of change-oriented communication research represents the smallest cluster of journal articles (n $= 7$) in the

typology. It differs from the first two types in its focus on the collective level and its goal to transform systems of consumption and production, rather than individual behavior.

Systems change communication is the second youngest (Md = 2014, IQR = 2011−2019) and the second most frequently cited (M = 23.1, SD = 22.8, min = 0, max = 53) strand of SCC research. Articles in this type are all published in different journals, with two articles in the *Journal of Cleaner Production* being the only exception. Geographically, North and South America are the only continents not addressed. A remarkable characteristic of this type is its comparative perspective. Of the journal articles covering European (n = 5) and Asian (n = 3) countries, a total number of n = 15 cases are presented.

The conceptualization of sustainable consumption of this type reflects its systemic perspective. While consumption areas remain largely unspecified (n = 4), there are multiple phases are often addressed (n = 5), with production and acquisition (n = 3) being the most frequent combinations. The dominant perspective on sustainability impacts considers both environmental and socio-economic dimensions (n = 5). Systems change communication research is does not focus on communication aspects (n = 2). On the sender side, it is mainly concerned with businesses communication (n = 5). While consumers are absent as senders, they feature as communication receivers in every second article. Overall, however, communication is viewed broadly, with two out five journal articles studying government communication, and a quarter of the articles targeting businesses and civil society.

Questions addressed by research in this type, which is typically empirical (n = 5), concern the effects of stakeholder participation in labeling initiatives ([5], [17], [29]) or communicative strategies to improve coordination between researchers and policymakers ([32]) or different actors of the food systems ([95]). A major weakness of research in this type is that it has remained contextual, exploratory, and case-based. This focus on single and small-n case studies means that the aggregate evidence base is not sufficiently robust to support general conclusions. Future tasks for communication research are seen in strengthening the integration of research efforts (e.g., into labeling and procurement) and in promoting the transfer of politically and socially resonant innovations.

4.3.4. Type IV: communication as constructing sustainable consumption (CC)

Type IV communication is, unlike the other types, not driven by the transformative agenda to change consumption systems. Instead, communication construction research (n = 12) takes a non-interventionist perspective and focuses on discourse and other communication artifacts (e.g., videos, text, ads, transcripts) to provide critical perspectives on how sustainable consumption is shaped, negotiated, and filled with meaning in human communication. This makes it well positioned to deconstruct and problematize interests and agendas behind references to sustainable consumption, as well as to situate and contextualize sustainable consumption in a broader view of society. An example of this is responsibilization theory, which explores the processes of how responsibility for socio-political projects like sustainability is assigned, for example, to consumers and what these processes reveal about power dynamics and dominant societal ideologies (Evans et al., 2017; Shamir, 2008; Soneryd and Uggla, 2015). While insights produced through this type of research can be used to inform sustainable consumption transformation work, the goal is clearly to understand rather than change.

Communication construction research is the oldest (Md = 2010, IQR = 2007−2015) and most frequently cited (M = 25.9, SD = 37.8, min = 0, max = 128) group of journal articles in the typology. Articles in this type are all published in different journals, with two

articles in the *Journal of Macromarketing* being the only exception. Geographically, this type of research is limited to European countries (n = 9) and the United States (n = 1).

Sustainable consumption is most commonly studied in single consumption areas, of which food (n = 4) and housing (n = 2) appear most often (with n = 4 unclear areas). Single and multiple phases are addressed to the same extent (n = 5 each), with acquisition (n = 4) and combinations of acquisition with production and usage (n = 2 each) being the most frequently mentioned. Sustainability impacts are mainly considered in an integrated perspective (n = 7). In line with its focus on understanding the construction of sustainable consumption in communication, both sustainable consumption (n = 10) and communication (n = 9) are central to the research presented in the journal articles. While the configuration of sender-receiver interactions is fairly broad, business-to-consumer communication is the most prevalent form (n = 7) studied.

Communication construction research is mostly empirical (n = 9). Studies investigate how conceptualizations of sustainability are constructed and conveyed in marketing (e.g., by animal welfare/ fair trade labels or in shops) ([4], [24], [36], [38]), references consumers make to sustainability in identity processes ([57], [62]), or how discourses on the appropriateness of housing space ([68]) or the role of digital communication in the context of sustainability ([103]) are shaped and change. Future research needs are seen in exploring the role of in-group/out-group membership in the diffusion of sustainable consumption across different cultural boundaries, in better understanding similarities and differences, as well as language use, in discourses related to sustainable consumption, and in taking a closer look at the sustainability of communication itself (resource requirements of communication infrastructure, equity issues of access and use). A promising avenue for future work is to go beyond deconstruction and problematization to provide constructive impulses on how communication can play a more proactive role in debunking and counteracting unsustainable consumption.

5. Discussion

In this section, we examine the trends and tendencies in research on SCC from an overarching perspective. We conclude by discussing the limitations of our literature review and narrative synthesis and by identifying four promising avenues for future research in the field.

5.1. Trends in conceptualizing and relating sustainable consumption and communication

Our central motivation for conducting this review was to systematically examine research output to date in the emerging field of sustainable consumption communication. The results, a SCC typology, show that although communication in this field covers a broad spectrum (individual/collective level, interventionist/ discursive orientation, heuristic/reflexive approach), some general insights can be made about the state of the research field. Four observations stand out: the dominance of weak conceptualizations of sustainable consumption, a preoccupation with the role of the individual consumer, the loose connections between communication theory and applied communication, and the tensions between disciplinary and domain orientations.

5.1.1. Weak vs. strong sustainable consumption

The findings of this review illustrate that most research on communicating sustainable consumption promotes what has been termed in the literature as a weak approach to sustainable

consumption. A weak approach focuses on efficiency gains through technology and emphasizes marketing greener or more socially responsible products to specific groups of consumers (Lorek and Fuchs, 2013). In communication, this may take the shape of advancing individual behavioral change through nudging, social advertising, or information provision. Strong sustainable consumption, by contrast, aims to reduce overall resource consumption and transcends economic distinctions between production/producers and consumption/households and conceptions of consumption as a market-based economic activity, for example, by non-commercial sharing. In communication, it focuses on stakeholder interactions, the emergence of social innovations in, for example, NGO communication about sustainable consumption at a community level via grassroots initiatives or deliberative processes in which meanings of sustainable consumption are explored and shaped (Lorek and Fuchs, 2013). While the typology includes both weak and strong approaches to sustainable consumption, there is a discernible focus, both in terms of development over time and in terms of publication volume, on weak sustainable consumption approaches.

5.1.2. Private consumers vs. consumer-citizens

In addition to the focus on its weak variant, sustainable consumption is mainly — especially in recent publications — conceived and investigated as individual private consumer behavior. The field thus reflects tendencies that have been problematized in the broader literature with the concepts "privatization" (Grunwald, 2010), "individualization" (Maniates, 2001; Middlemiss, 2010), and "consumer scapegoatism" (Akenji, 2014) of sustainable consumption. As the limitations of attributing responsibility solely to the consumer were recognized, researchers developed models of "distributed responsibility" that included other stakeholders such as producers, traders, political decision-makers, and consumers (Evans et al., 2017). Research on SCC, however, still primarily focuses on the individual as the addressee of communication in their role as a private market actor. This narrow focus is somewhat surprising, as it is widely acknowledged that individuals contribute to sustainable consumption not only as private consumers but also as citizens, members of organizations, and community innovators. (McGregor, 2005). The lack of research into these roles found by this review suggests that there is a need for updating and extending SCC beyond the sphere of private household consumption.

5.1.3. Communication theories vs. applied communications

Communication science has developed a rich body of theoretical perspectives that covers a wide range from rhetorical to socio-psychological and critical traditions (Craig, 1999; Lock et al., 2020). We found that the literature on SCC, in particular in types I-III, only loosely connects to the body of available communication theories and instead primarily focuses on concrete and technical aspects of communication. This tendency reflects the difference between communication science as a theoretically grounded field of scholarship and applied communications research as an intervention-focused and highly empirical undertaking, where the former aims to understand and explain communication processes and the latter is more concerned with message design and transmission, primarily in mass communication contexts and tied to specific audience effects (Rivera, 2017). Interest in SCC seems to emerge more from sustainable consumption researchers using selected research findings for their work on facilitating change "outside-in" (Barth and Michelsen, 2013), rather than from communication scientists working to apply their perspectives

"inside-out" to sustainable consumption phenomena. The formation of interdisciplinary teams bringing together consumer researchers from different fields as well as communication researchers could be an important step to moving beyond the strongly instrumental use of communication and making the diversity of communication studies theory more fruitful for SCC.

5.1.4. Disciplinary vs. domain orientation

The descriptive findings of the review show that research on SCC comes from a variety of academic fields and is published in a wide variety of academic journals. Notably, some research traditions that are prominent in sustainable consumption research feature only marginally or are completely absent in our sample (e.g., practice theory). While disciplinary diversity in the field and the focus on specific domains are assets, they remain disjointed which significantly hinders the development of a resilient and shared body of knowledge in the field of SCC. Sectorization is particularly strong in consumption domains: while food and purchase are strongly represented in the final sample, surprisingly few works are found in the consumption area of clothing or in phases after purchase. This could be because researchers do not always use the terminology of sustainable consumption. A consequence of this fragmentation is an increased difficulty in learning from each other, slowing down the synthesis of evidence or hindering the strategic use of the sophisticated communication approaches that are available (Lock et al., 2020). For further consolidation of the field, efforts to reintegrate disjointed perspectives, for example, through common terminological or conceptual frameworks (Di Giulio et al., 2014) or the strategic composition of research teams and collaboration (Freeth and Caniglia, 2020), appear to be necessary and promising approaches.

5.2. Limitations

In our corpus, we included such SCOPUS-indexed journal articles that explicitly use the search terms "communication" and "sustainable consumption" and thereby position themselves in the SCC field. However, the search terms excluded journal articles in which these terms were not explicitly mentioned, even though they may deal with the topic under other terms (e.g., passive houses, public transport, tourism, repair cafes). It would be worthwhile for future research to explore whether the SCC types identified in this review also apply to an extended corpus including topics of sustainable consumption and communication that do not explicitly use the terminology of SCC (which may also yield interesting insights into which disciplines, theoretical perspectives, or domain foci use SCC terminology and how frequently). A further limitation is that the review was restricted to peer-reviewed journal publications and so excluded literature published in non-academic media.

In terms of content, this review has concentrated on exploring SCC as a new area of research and identifying research trends in the relationship between sustainable consumption and communication. While sustainability scientists and researchers have good reason to believe that some types of communication identified in our review may lead to sustainable consumption, the design of our study does not allow conclusions to be drawn regarding the effectiveness of interventions to achieve sustainable consumption. Although a synthesis of evidence was not the focus here, we see a need for further work in this direction, and the typology developed in this review may be a good starting point for this project. Furthermore, it should be noted that the thematic coding was

informed by the theoretical knowledge that the interdisciplinary group of authors brought to the analysis. While that theoretical knowledge was an explicit part of the methodological approach, it inevitably remains selective and non-exhaustive. Other data analysis procedures such as discourse analysis would have provided a different perspective, for example, focusing more on how conceptualizations of communication and sustainable consumption are justified and embedded in institutional contexts. While this was not the goal of this review, future research focusing on discourses of communication and sustainable consumption may yield valuable insights into power relations, hegemonial and marginalized perspectives, as well as strategies in shaping the research agendas in the field.

Finally, the typology highlights differences in the way communication and sustainable consumption are conceptualized and related to each other. However, the typology contains ideal-types and individual journal articles rarely fall into a single category, and often show characteristics of other types to varying degrees. Thus, the typology does not offer a clear-cut sorting, but rather highlights different emphases in research interests in the emerging field of SCC.

5.3. Future directions for the field

SCC is a relatively young and still emerging field of research. The review has identified several directions in which concerted efforts can help to further consolidate the field. In what follows, we briefly identify and highlight four such directions.

5.3.1. Developing shared frameworks and terminology

A key insight derived from the review is the need to integrate communication and sustainable consumption research more strongly by creating common conceptual frameworks, thereby countering the current fragmentation of the field. A promising earlier attempt at conceptual integration involves identifying central concepts in the overlapping areas of different disciplinary fields as "boundary objects" (Roux et al., 2017), linking them to one another, and substantiating them with established theoretical and methodological approaches from these fields. An example from the field of sustainable consumption research is the integrative framework proposed by Di Giulio et al. (2014), which aims to strengthen interdisciplinary exchange by organizing it around key questions and concepts (the distinction between objective needs and subjective desires, intent and impact-oriented evaluation of consumption, different types of instruments to change consumption). Borrowing from related applied fields of communication such as health communication, social marketing, and climate change communication can provide helpful impulses. A further approach to advance conceptual integration is to systematically examine discourses relevant to sustainable consumption from the perspective of SCC. Additional literature reviews could be helpful in opening up further disciplinary fields using more discourse-sensitive search terms (e.g., weak and strong sustainability, frugality, sufficiency, sharing, social innovations, and many others).

In sum, the typology developed in this article can be used for four main purposes. First, it opens up various possibilities for researchers to explore communication on sustainable consumption, regardless of their goals and approaches. Second, the typology shows where current research on sustainable consumption refers to communication, how it is referenced, and how communication is conceptualized in the field. Third, typologies can help, especially in emerging fields, to contextualize the singularity of individual cases in qualitative and case study research and contribute to structuring the field. Fourth, the typology can also help identify and analyze the different mechanisms through which communication triggers changes in individual behavior and in systems of production and consumption.

5.3.2. Diversifying research foci

The typology developed in this review shows that there is a need to broaden the focus in the field. This is particularly evident in the consumption areas (e.g., clothing, mobility), consumption phases (use and disposal) and communication dyads (e.g., two-way communication, consumers as communicators) neglected in SCC research. The review also reveals blind spots concerning the regions being studied and which future research needs to address to reflect the diversity in the field as a whole.

5.3.3. Synthesizing evidence

An important step in the further consolidation of the field is to take stock and to investigate where convergent findings are already available, where contradictory results need to be clarified, and where previously unasked or unanswered questions indicate promising findings. In addition to literature reviews, meta-analyses are particularly useful here to provide information on the effectiveness of communication and to inform practice. Sustainable consumption research is a field in which there are numerous controversies about which kind of change helps to overcome which problems in which way (Tukker et al., 2008). Given these normative questions, it will be important to adopt a critical perspective and to take greater account of issues of power and special interests. The question is not simply "What works?" but "What works for whom?" and "What are the implications for sustainability?" (Tikly, 2015).

5.3.4. Innovating critical-constructive perspectives

In addition to its focus on individual and behavioral change, research should investigate how communication can address issues related to strong sustainable consumption. The dominant logic of communication as a linear process to promote acceptance of specific products or policies needs to be expanded to include more self-reflective, open, and exploratory communication formats. These formats pose fundamental questions that lead out of the dominant narrow view of consumption as individual market decisions and invite the exploration of alternative narratives and futures. What role should consumption play as a strategy for satisfying needs and for a "good life" in a sustainable society (Defila and Di Giulio, 2020)? Which power structures and drivers of today's production and consumption systems have to be overcome (Fuchs et al., 2016)? How much and what kind of consumption do we want in a sustainable future (Balderjahn et al., 2020)?
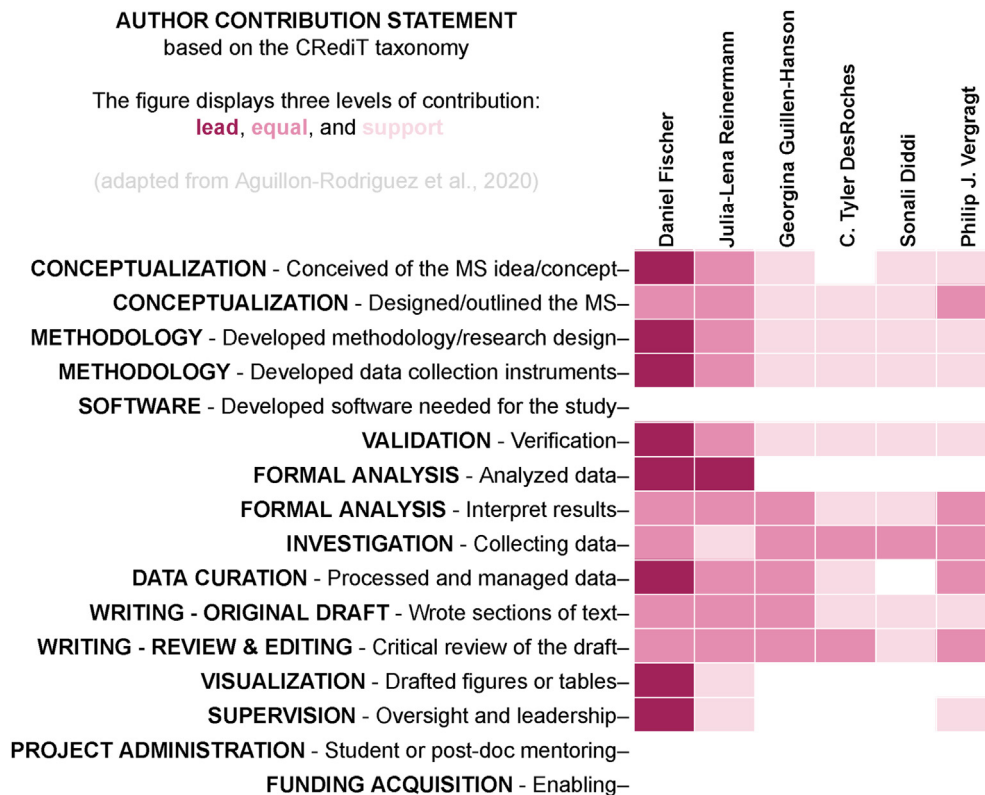
6. Conclusion

Sustainable consumption is an essential component of sustainable development, as seen in the political context leading to the adoption of SDG 12. Although this identifies sustainable consumption a key field of sustainability communication, SCC remains ill defined. This systematic review and narrative synthesis explored how communication and sustainable consumption have been conceptualized and related to each other in the peer-reviewed literature. The findings show that SCC is a young, growing, disciplinarily diverse, and highly fragmented and sectorized field of research. Four types of SCC research were described, conceptualizing and examining communication as an approach to either (1) behavior change, (2) self-empowerment, (3) systems change, or (4) sustainable consumption discourses. Our findings show that sustainable consumption is largely conceptualized as individual behavior change, especially in the purchase of products, and communication is mainly studied with regard to how message

design and transmission promote behavior change. Given the massive impact of current consumption patterns, this research undoubtedly represents a crucial effort. An important task for future research is to bring together evidence from different communication approaches across different consumption areas (e.g., food and clothing) and phases (e.g., purchase, but also usage and disposal) to further improve the effectiveness of SCC. At the same time, the focus of the field on this type of research runs the risk of reducing communication to the marketing of greener or more socially responsible products, which would confine it to the area of weak sustainable consumption, giving rise the responsibi-

sustainable consumption and communication are conceived and researched. This paper can be seen as a first contribution to establish SCC research as a cross-sectoral and interdisciplinary space that researchers from different research traditions and sub-fields can use for exchange and as a home.

CRediT Author Statement

We disclose our author contributions based on the CRediT statement (Brand et al., 2015), using the visualization approach by Aguillon-Rodriguez et al. (2020).

AUTHOR CONTRIBUTION STATEMENT
based on the CRediT taxonomy

The figure displays three levels of contribution:
lead, **equal**, and **support**

(adapted from Aguillon-Rodriguez et al., 2020)

	Daniel Fischer	Julia-Lena Reinermann	Georgina Guillen-Hanson	C. Tyler DesRoches	Sonali Diddi	Philip J. Vergragt
CONCEPTUALIZATION - Conceived of the MS idea/concept	lead	equal	support		support	
CONCEPTUALIZATION - Designed/outlined the MS	support	equal		support		equal
METHODOLOGY - Developed methodology/research design	lead	equal				
METHODOLOGY - Developed data collection instruments	lead	equal				
SOFTWARE - Developed software needed for the study						
VALIDATION - Verification	lead	equal	support	support	support	support
FORMAL ANALYSIS - Analyzed data	lead	lead				
FORMAL ANALYSIS - Interpret results	equal	equal	equal	equal	equal	equal
INVESTIGATION - Collecting data	equal	support	equal	equal	equal	equal
DATA CURATION - Processed and managed data	lead	equal	equal		equal	equal
WRITING - ORIGINAL DRAFT - Wrote sections of text	lead	equal	equal	equal	equal	equal
WRITING - REVIEW & EDITING - Critical review of the draft	lead	equal	equal	equal	equal	equal
VISUALIZATION - Drafted figures or tables	lead	support				
SUPERVISION - Oversight and leadership	lead	support				support
PROJECT ADMINISTRATION - Student or post-doc mentoring						
FUNDING ACQUISITION - Enabling						

lization and privatization of sustainable consumption. An important task of future research on SCC should therefore also be to expand beyond the current product-related focus on business-to-consumer communication. Our review also motivates researchers from different disciplines to clarify their conceptualization of and approach to communication and to use the potential of communication theories not only to implement and communicate concrete sustainable consumption alternatives but also to study and facilitate their creation in discourses and deliberative processes. This will bring greater attention to questions of power dynamics in SCC and the promotion of certain types of research, which were only marginally and sporadically problematized in the sampled journal articles.

By clarifying the relationship between communication and sustainable consumption, this review provides a starting point for more systematic and targeted research in the future. Further consolidation of this still young field will largely depend on how well it succeeds in establishing a more conscious approach to how

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jclepro.2021.126880.

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